

Application Serial No: 10/054,575  
Attorney Docket No.: 51951 (ACT-164)

### REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.112, and light of the remarks which follow are respectfully requested.

Claims 1-23 are pending in the application, claims 21-23 having been newly presented.

By the foregoing amendments, independent claims 1 and 10 have been revised by adding a first connector "front face". Claims 1, 10 and 11 have been revised by pointing out that the first connector opposite sidewalls extend from the front face. The independent claims have further been revised by deleting the "disposed therein" language relating to the optical components and the "planar" recitations relating to the second connector, to more clearly make allowance for the possibility of surface mounted optical components, for example, laser diodes, light emitting diodes (LEDs), and photodetectors, such as set forth, for example, at page 6, lines 2-6 of the specification. Claims 4 and 14 have been rewritten in independent form, including each of the features of their respective base claims, with exception of the "disposed therein" and "planar" language discussed above. Other revisions are for form. Claims 21-23 have been newly presented to point out further aspects of the invention.

The declaration has been deemed defective for the reasons set forth in section 1 of the Official Action. A new declaration is attached.

Claims 1-10 (and presumably claim 20) stand objected to for the reasons set forth in section 2 of the Official Action. This objection is respectfully traversed for at least the following reasons.

The phrase "each of said sphere centers" in claims 1 and 10 has been found objectionable. This objection is improper, as claims 1 and 10 set forth "a pair of alignment spheres each having a sphere center". The later-recited "each of said sphere centers" in claims 1 and 10 refers back to this earlier recitation.

The phrase "major surface in a (100) crystallographic plane" is well understood by persons skilled in this art. In this regard, this phrase refers to a single crystal silicon wafer or chip derived therefrom of (100) orientation. Accordingly, withdrawal of this objection is respectfully requested.

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Claims 1 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by *Smith et al* (U.S. Patent No. 5,790,733). Claims 1-3, 5, 7, 8, 11-13, 15, 17 and 18 stand rejected under 35 U.S.C. §102(b) as being anticipated by *Blonder et al* (U.S. Patent No. 5,179,609). In addition, claims 9, 10, 19 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Blonder et al* in view of "prior art disclosed", and claim 16 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blonder et al* in view of *Smith et al*. These rejections are respectfully traversed for at least the following reasons.

The present invention relates to systems and methods for aligning optical connectors. Independent claim 1, for example, sets forth a system for aligning two optical connectors. The system includes: a) a first connector having at least one optical component, a front face and opposite side walls extending from the front face, each side wall including a groove defined therealong; b) a pair of alignment spheres each having a sphere center; and c) a second connector having a front face and at least one optical component. The second connector includes a pair of recesses defined in the front face. The recesses are dimensioned to at least partially seat the alignment spheres such that each of the sphere centers is distanced from the second connector front face so as to mechanically engage a corresponding groove defined within the side walls of the first connector. The first connector face faces the second connector face. Independent claims 10 and 11 set forth further aspects of the invention.

With reference to Figure 1, *Smith et al* discloses an optoelectronic device receptacle which includes an alignment block assembly 10 comprising first and second assembly portions 12, 14. The first assembly portion 12 includes first and second receiving cavities 24, 26 for receiving balls 74 for purposes of aligning alignment blocks and individual optical fibers. Figure 8 illustrates a preferred connector 98 adapted for connection with receptacle 92. The connector alignment block 100 has first and second receiving cavities for receiving alignment balls in a surface opposite the surface and cavities of receptacle 92.

With reference to Figure 1, *Blonder et al* discloses an optical assembly 10 which includes a header 12 for supporting an optical device 14 and associated electrical contact pads 16, 18, the header 12 including a pair of fiducial features 20, 22. A base 30 supports

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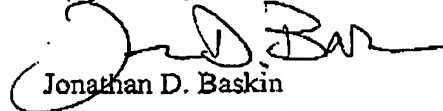
an optical fiber 32 within a groove 34, the base having a pair of fiducials 40, 42 formed on surface 39. Mechanical attachment of header 12 and base 30 is accomplished by spherical members 46, 48 positioned within the pair of cavities created by the alignment fiducials.

Neither *Smith et al* nor *Blonder et al*, nor any combination thereof discloses or suggests each feature of the invention as presently claimed. For example, neither *Smith et al* nor *Blonder et al* discloses or fairly suggests a first connector having a front face and opposite side walls extending from the front face, wherein each side wall includes a groove defined therealong, a second connector having a front face and a pair of recesses defined in the front face to at least partially seat alignment spheres, mechanically engaging the sidewall grooves of the first connector, wherein the first connector face faces the second connector face. The recesses/alignment fiducials of both *Smith et al* and *Blonder et al* used in connection with the alignment spheres are formed in opposing faces of the connectors – the alignment spheres do not engage the opposite sidewalls as presently claimed. There is no suggestion in either of the applied documents of such a structure. Accordingly, withdrawal of these rejections is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned in order to expedite prosecution.

Respectfully submitted,



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